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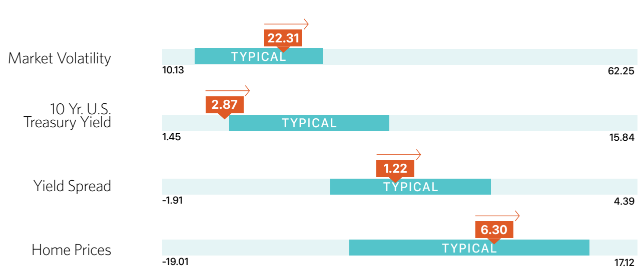
Focus

Bitcoin Mania — what does it mean ?

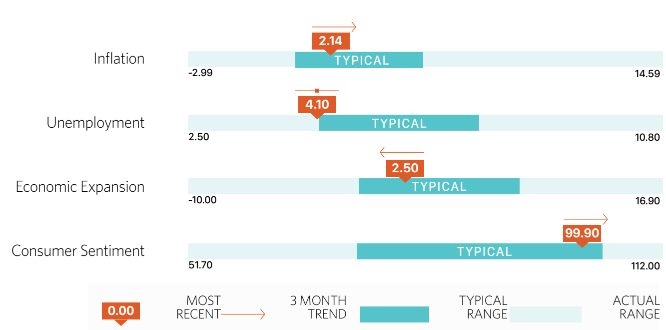
Read about the new forms of electronic money and whether or not they deserve a place in your portfolio on page 2.

SPRING 2018

MARKET SNAPSHOT



ECONOMIC SNAPSHOT



To Bit or Not to Bit: What Should Investors Make of Bitcoin Mania?

Bitcoin and other cryptocurrencies are receiving intense media coverage, prompting many investors to wonder whether these new types of electronic money deserve a place in their portfolios.

Cryptocurrencies such as bitcoin emerged only in the past decade. Unlike traditional money, no paper notes or metal coins are involved. No central bank issues the currency, and no regulator or nation state stands behind it.

Instead, cryptocurrencies are a form of code made by computers and stored in a digital wallet. In the case of bitcoin, there is a finite supply of 21 million[1], of which more than 16 million are in circulation[2]. Transactions are recorded on a public ledger called blockchain.

People can earn bitcoins in several ways including buying them using traditional fiat currencies[3] or by "mining" them—receiving newly created bitcoins for the service of using powerful computers to compile recent transactions into new blocks of the transaction chain through solving a highly complex mathematical puzzle.

For much of the past decade, cryptocurrencies were the preserve of digital enthusiasts and people who believe the age of fiat currencies is coming to an end. This niche appeal is reflected in their market value. For example, at a market value of $16,000 per bitcoin,[4] the total value of bitcoin in circulation is less than one tenth of 1% of the aggregate value of global stocks and bonds. Despite this, the sharp rise in the market value of bitcoins over the past weeks and months has contributed to intense media attention.

What are investors to make of all this media attention? What place, if any, should bitcoin play in a diversified portfolio? Recently, the value of bitcoin has risen sharply, but that is the past. What about its future value?

You can approach these questions in several ways. A good place to begin is by examining the roles that stocks, bonds, and cash play in your portfolio.

1. Source: Bitcoin.org.

2. As of December 14, 2017. Source: Coinmarketcap.com.

3. A currency declared by a government to be legal tender.

4. Per Bloomberg, the end-of-day market value of a bitcoin exceeded $16,000 USD for the first time on December 7, 2017.

Expected Returns

Companies often seek external sources of capital to finance projects they believe will generate profits in the future. When a company issues stock, it offers investors a residual claim on its future profits. When a company issues a bond, it offers investors a promised stream of future cash flows including the repayment of principal when the bond matures. The price of a stock or bond reflects the return investors demand to exchange their cash today for an uncertain but greater amount of expected cash in the future. One important role these securities play in a portfolio is to provide positive expected returns by allowing investors to share in the future profits earned by corporations globally. By investing in stocks and bonds today you expect to grow your wealth and enable greater consumption tomorrow.

Government bonds often provide a more certain repayment of promised cash flows than corporate bonds. Thus, besides the potential for providing positive expected returns, another reason to hold government bonds is to reduce the uncertainty of future wealth. And inflation-linked government bonds reduce the uncertainty of future inflation-adjusted wealth.

Holding cash does not provide an expected stream of future cash flow. One US dollar in your wallet today does not entitle you to more dollars in the future. The same logic applies to holding other fiat currencies — and holding bitcoins in a digital wallet. So we should not expect a positive return from holding cash in one or more currencies unless we can predict when one currency will appreciate or depreciate relative to others.

The academic literature overwhelmingly suggests that short-term currency movements are unpredictable, implying there is no reliable and systematic way to earn a positive return just by holding cash, regardless of its currency. So why should investors hold cash in one or more currencies? One reason is because it provides a store of value that can be used to manage near-term known expenditures in those currencies.

With this framework in mind, it might be argued that holding bitcoins is like holding cash; it can be used to pay for some goods and services. However, most goods and services are not priced in bitcoins.

A lot of volatility has occurred in the exchange rates between bitcoins and traditional currencies. That volatility implies uncertainty, even in the near term, in the amount of future goods and services your bitcoins can purchase. This uncertainty, combined with possibly high transaction costs to convert bitcoins into usable currency, suggests that the cryptocurrency currently falls short as a store of value to manage near-term known expenses. Of course, that may change in the future if it becomes common practice to pay for all goods and services using bitcoins.

If bitcoin is not currently practical as a substitute for cash, should we expect its value to appreciate?

Supply And Demand

The price of a bitcoin is tied to supply and demand. Although the supply of bitcoins is slowly rising, it may reach an upper limit, which might imply limited future supply. The future supply of cryptocurrencies, however, may be very flexible as new types are developed and innovation in technology makes many cryptocurrencies close substitutes for one another, implying the quantity of future supply might be unlimited.

Regarding future demand for bitcoins, there is a non-zero probability[5] that nothing will come of it (no future demand)

5. Describes an outcome that is possible (or not impossible) to occur.

and a non-zero probability that it will be widely adopted (high future demand).

Future regulation adds to this uncertainty. While recent media attention has ensured bitcoin is more widely discussed today than in years past, it is still largely unused by most financial institutions. It has also been the subject of scrutiny by regulators. For example, in a note to investors in 2014, the US Securities and Exchange Commission warned that any new investment appearing to be exciting and cutting-edge has the potential to give rise to fraud and false "guarantees" of high investment returns.[6] Other entities around the world have issued similar warnings. It is unclear what impact future laws and regulations may have on bitcoin's future supply and demand (or even its existence). This uncertainty is common with young investments.

All of these factors suggest that future supply and demand are highly uncertain. But the probabilities of high or low future supply or demand are an input in the price of bitcoins today. That price is fair, in that investors willingly transact at that price. One investor does not have an unfair advantage over another in determining if the true probability of future demand will be different from what is reflected in bitcoin's price today.

What To Expect

So, should we expect the value of bitcoins to appreciate? Maybe. But just as with traditional currencies, there is no reliable way to predict by how much and when that appreciation will occur. We know, however, that we should not expect to receive more bitcoins in the future just by holding one bitcoin today. They don't entitle holders to an expected stream of future bitcoins, and they don't entitle the holder to a residual claim on the future profits of global corporations.

None of this is to deny the exciting potential of the underlying blockchain technology that enables the trading of bitcoins. It is an open, distributed ledger that can record transactions efficiently and in a verifiable and permanent way, which has significant implications for banking and other industries, although these effects may take some years to emerge.

When it comes to designing a portfolio, a good place to begin is with one's goals. This approach, combined with an understanding of the characteristics of each eligible security type, provides a good framework to decide which securities deserve a place in a portfolio. For the securities that make the cut, their weight in the total market of all investable securities provides a baseline for deciding how much of a portfolio should be allocated to that security.

Unlike stocks or corporate bonds, it is not clear that bitcoins offer investors positive expected returns. Unlike government bonds, they don't provide clarity about future wealth. And, unlike holding cash in fiat currencies, they don't provide the means to plan for a wide range of near-term known expenditures. Because bitcoin does not help achieve these investment goals, we believe that it does not warrant a place in a portfolio designed to meet one or more of such goals.

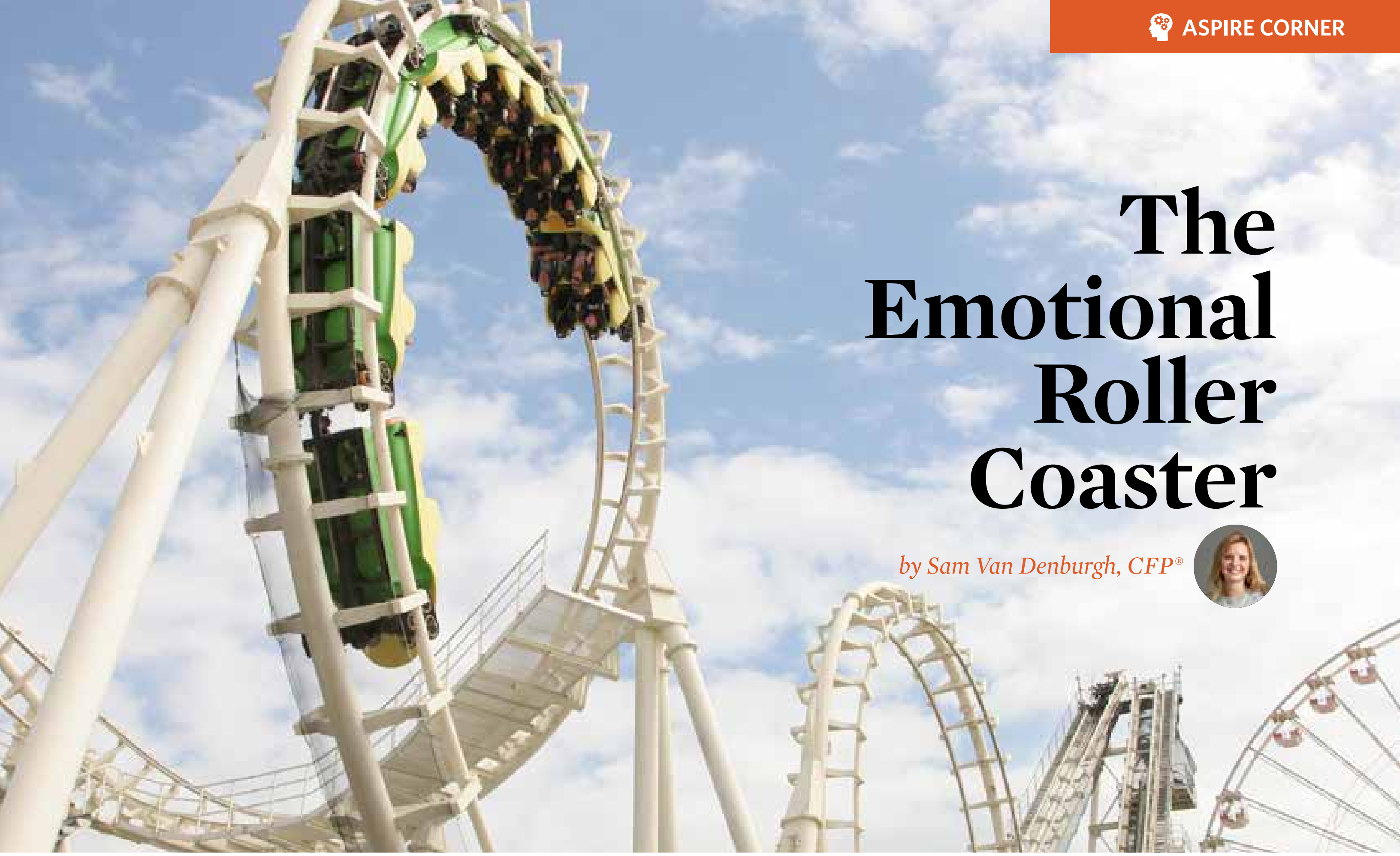
If, however, one has a goal not contemplated herein, and you believe bitcoin is well suited to meet that goal, keep in mind the final piece of our asset allocation framework: What percentage of all eligible investments do the value of all bitcoins represent? When compared to global stocks, bonds, and traditional currency, their market value is tiny. So, if for some reason an investor decides bitcoins are a good investment, we believe their weight in a well-diversified portfolio should generally be tiny.[7]

Because bitcoin is being sold in some quarters as a paradigm shift in financial markets, this does not mean investors should rush to include it in their portfolios. When digesting the latest article on bitcoin, keep in mind that a goals-based approach based on stocks, bonds, and traditional currencies, as well as sensible and robust dimensions of expected returns, has been helping investors effectively pursue their goals for decades.

Source: Dimensional Fund Advisors LP.

6. "Investor Alert: Bitcoin and Other Virtual Currency-Related Investments," SEC, 7 May 2014.

7. Investors should discuss the risks and other attributes of any security or currency with their advisor prior to making any investment.



The Emotional Roller Coaster

by Sam Van Denburgh, CFP®

Most people like to think they are rational when it comes to investing but even the most sophisticated investors are still susceptible to behavioral biases. It's nature. As human beings, we are motivated by fear and greed and losing money is something we physically equate with danger.

One of the big biases we suffer from is recency bias. We tend to use our recent experience as the baseline for what will happen in the future. When markets are good we start to forget about market corrections. We might even start to wonder why we aren't taking on more risk since the market continues to climb. Then it doesn't. If we aren't primed for that moment, we are shocked and wonder how we missed the bubble.

Conversely, if we are in a down market, we assign a higher probability that it is going to persist. The fear of "this time is different" kicks in and we are inclined to bail on our portfolios even though global markets have historically always recovered. Then, we are left wondering what to do with all of our cash.

I'm not trying to say that as investors we should be able to predict the timing of the bubble or the upswing but we should consider both possibilities as potential outcomes and plan accordingly. At TCI, our investment approach is based on diversification and discipline rather than prediction and timing. Market ups and downs are part of the long-term plan we build together to get you from point A to point B.

Humans are not wired for disciplined investing. Being aware of the emotions that may arise during market movements are part of the battle. When anxiety hits, we are here to help you rationalize your emotional reactions and to help you stay the course.

Sam Van Denburgh, CFP® is an Advisor in our Scottsdale office.

ASPIRE is a program offered by TCI Wealth Advisors that provides young professionals access to sound financial planning and education to plan for long term financial success.

The One That Got Away – and Why It Doesn't Matter

by Scott Styrmoe, MBA, CPA, CFP®

In the Apache Tribal Lands of east-central Arizona, the fish was a legend among anglers: a wise and wily brown trout with vivid black speckles and a belly as bright and orange as a hot ember. He'd lived for probably more than a decade, or maybe two, in the cool and still waters of Hawley Lake, eluding capture and fostering myth. Weighing 25 pounds, or more by some estimates, he was a fierce fighter who would test the strength and determination of any angler who hooked him.

Which is exactly what he did to me one spring weekend.

I'd organized a fishing tournament for charity that weekend in late May and I'd been busy all day with the details of the competition. By late afternoon, the fishermen were starting to come off the lake so, on a whim, I decided to try my luck. Using a bead head black woolly bugger — a favorite of the big browns that are common in Hawley Lake — I cast my line out across the water and let the fly sink down below the surface. At first, I felt only a soft tug. Then came a ferocious yank until my rod bowed nearly in half and the tip was flicking the water. I didn't know it at that moment, but I was going to be locked in combat with that fish for the next four hours.

That isn't how I usually spend my days. I've been a CPA since 1985, but I shifted gears in 2006 and became a certified financial planner, or CFP®, in 2009. For the past twelve years, I've been working with clients to help them meet their short-term and long-term financial objectives, the last five of those as a sole practitioner in Tucson. Six months ago, I joined TCI Wealth Advisors, a move that has allowed me to focus less on administrative tasks and managing a business and more on helping my clients plan for and achieve their goals.

Still, I'm a passionate weekend fly fisherman and I've been fortunate to cast my lures into some of the best rivers and lakes in the Southwest. Fishing gives me time to think. One of those thoughts: fly fishing is a pretty good metaphor for my profession.

Contrary to popular belief, neither fishing nor investing involves any sort of magic or voodoo. Some folks spend a fortune on fancy rods and lures, probably in the vain belief that a lavish display of might will frighten the fish into surrender. They'll buy an expensive English fly box, reels with the precision of a Swiss watch, but none of that insures a creel full of trout.

Successful fly fishing is more about patience and discipline. Success is keeping a steady hand on a strong and flexible rod while dropping the right fly precisely into the dark pool of water where the fish might be feeding. The biggest fish are, like mine that afternoon, wise and wily. So the best fishermen are careful students of nature: the wind, the sun, the warmth and depth of the water. Keeping all those principles in mind, the most skillful anglers cast into the water over and over with quiet perseverance.

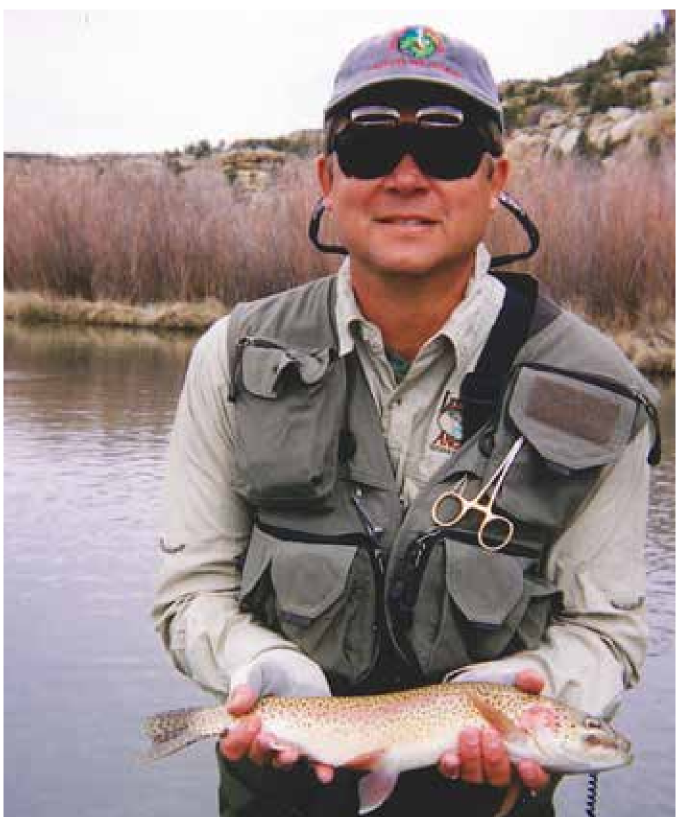
That's probably a good summary of a solid investment strategy, as well. Research has shown that a patient and disciplined approach – even in challenging markets – yields better results than voodoo strategies like timing the market or chasing hot stocks. A well-crafted portfolio – with the strength and flexibility of a graphite rod – will withstand the inevitable ups and downs of the market. There's no such thing as one perfect portfolio. Markets are unpredictable. What works best is a portfolio strategy designed carefully to meet specific goals over time.

I've always believed that fishing is for optimists. What lies beneath the water is pretty much a mystery. An angler carries only a few tools: rod, reel, line and bait – and faith. In terms of gear, less is more. Too much complicated stuff just gets in the way. What's more important is a generally sunny outlook about your prospects and a willingness to practice the necessary skills.

Investing is for optimists, too. Actually, I believe that investing requires a kind of pragmatic optimism. To quote the legendary economist and investor Benjamin Graham, "The intelligent investor is a realist who sells to optimists and buys from pessimists." All markets will, over time, experience corrections, dips, inexplicable spikes, lusty run-ups, followed by recessions or even doldrums. In the short term, markets can be highly volatile. That's why trying to beat the markets is costly and counterproductive and usually results in lower overall returns. But investors who take the long view generally prosper. The data show that since 1926 in the U.S., the historical average annual rate of return on the S&P 500 index has been about 10%. That, among other reasons, is why I have faith.

Fly fishing is usually seen as a pretty solitary pursuit and often that's the case. But not long after I'd hooked that big brown trout on Hawley Lake, a crowd started to gather on the shore to cheer me on. Hour after hour, while I wrestled that trout, they watched and waited, occasionally offering advice and encouragement. After a while, my arms and shoulders began to burn with fatigue. The sun dropped low on the horizon. A bone-chilling cold set in. Those 100 or so anglers on shore were more than weary, I'm sure, after a day on the lake. Still, they stayed with me.

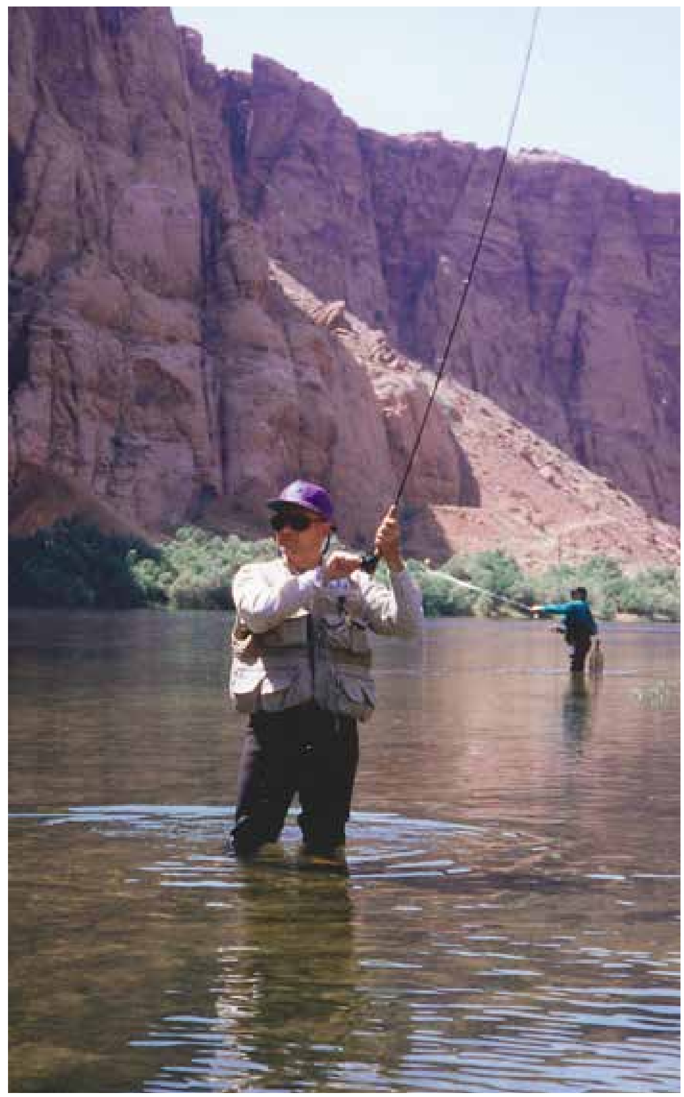
Support: that's one of the reasons why I joined TCI. Here, I found an encouraging environment and a shared philosophy of conservative investing principles. TCI's deep bench of experienced advisors have a wealth of combined wisdom from decades of navigating financial challenges. My TCI experience has been characterized by teamwork, a commitment to sharing resources and information that will benefit our clients and their families for generations to come.



For nearly four hours as the sky darkened over Hawley Lake, I fought the good fight with that fish, but in truth he had me beat from the start. When I was so exhausted that I could no longer hold my five-weight rod up, he made a swift turn and snapped the line, vanishing into the deep. I felt a little guilty. I thought maybe the folks who'd gathered to support me would be disappointed that they hadn't gotten so much as a glimpse of that legendary brown trout. Maybe they were hoping for a celebratory fish fry.

But I was relieved, too. The titanic battle was over and the fish had won. I'm a catch-and-release guy, so there never was going to be a fish fry. It was one of the best experiences I've had in a lifetime of fishing. Hooking into that big fish and joining the TCI team were both once in a lifetime opportunities. In hindsight, there are no regrets because I definitely landed the "big one".

Maybe that's the point of this story. In life, we talk about the pursuit of happiness. Maybe the most important word in that phrase is actually pursuit. We have less control over our lives than we'd like most of the time. We have limited resources. (Try landing a 25-pound fish with a five-weight rod in a float tube.) What I've learned is that happiness isn't an end point; it's embedded in the journey. So craft a good plan, have a little faith, and hope for the best.



Scott Styrmoe, MBA, CPA, CFP® is an Advisor in our Tucson office and Shareholder for TCI Wealth Advisors.

Basics of Cybersecurity

by Art Tellez

As we start 2018 and reflect on 2017, one of the major news stories of 2017 — cybersecurity issues like the Equifax data breach — becomes an opportunity to start fresh in 2018. If you are still thinking about resolutions for 2018 here are a few cybersecurity items you may want to consider:

- Think before you click! Do not click any links or attachments in suspicious emails. This is one of the easiest "ins" a potential hacker uses to gain access to your data.
- Some simple password management tips can help make your online presence more secure. Do not use the same password for multiple sites. If a fraudster is able to learn a reused password from one site, then they have easy access to all your sites. If you are concerned about having a lot of passwords then consider a password manager application. This lets you remember one password and the application does the rest. At TCI we use an application called LastPass and there are a number of other good applications available. Finally, change your password on a regular basis (say quarterly). At a minimum, if you have not changed passwords to important sites in over a year consider changing them today.
- Regularly monitor your accounts for unusual activity and if you discover something unusual follow up immediately.
- Avoid using public Wi-Fi. It may seem convenient (we all like to conserve our data), but the downside is that these networks are not secure and are vulnerable to hackers and viruses. At a minimum never access financial applications while you are on public Wi-Fi.
- Make sure your computer has antivirus software that is up to date.
- Make sure your home Wi-Fi has a secure password.

We hope these tips help you have a safe online experience.

Art Tellez is Chief Operating Officer and Shareholder for TCI Wealth Advisors.

Reminder —

OFFICE CLOSURES

TCI offices will be closed the following dates for Holidays:

Friday, March 30th
Monday, May 28th

Recent Market Volatility

After a period of relative calm in the markets, in recent days the increase in volatility in the stock market has resulted in renewed anxiety for many investors.

by Sam Swift, CFA, CFP®, AIF®

From February 1–5, the US market (as measured by the Russell 3000 Index) fell almost 6%, resulting in many investors wondering what the future holds and if they should make changes to their portfolios.[1] While it may be difficult to remain calm during a substantial market decline, it is important to remember that volatility is a normal part of investing. Additionally, for long-term investors, reacting emotionally to volatile markets may be more detrimental to portfolio performance than the drawdown itself.

1. Frank Russell Company is the source and owner of the trademarks, service marks, and copyrights related to the Russell Indexes.

Intra-Year Declines

Exhibit 1 shows calendar year returns for the US stock market since 1979, as well as the largest intra-year gains and declines occuring during a given year. During this period, the average intra-year decline was about 14%. About half of the years observed had declines of more than 10%, and around a third had declines of more than 15%. Despite substantial intra-year drops, calendar year returns were positive in 32 years out of the 37 examined. This goes to show just how common market declines are and how difficult it is to say whether a large intra-year decline will result in negative returns over the entire year.

Reacting Impacts Performance

If one was to try and time the market in order to avoid the potential losses associated with periods of increased volatility, would this help or hinder long-term performance? If current market prices aggregate the information and expectations of market participants, stock mispricing cannot be systematically exploited through market timing. In other words, it is unlikely that investors can successfully time the market, and if they do manage it, it may be a result of luck rather than skill. Further complicating the prospect of market timing being additive to portfolio performance is the fact that a substantial proportion of the total return of stocks over long periods comes from just a handful of days. Since investors are unlikely to be able to identify in advance which days will have strong returns and which will not, the prudent course is to remain invested during periods of volatility rather than jump in and out of stocks. Otherwise, an investor runs the risk of being on the sidelines on days when returns happen to be strongly positive.

Exhibit 2 helps illustrate this point. It shows the annualized compound return of the S&P 500 Index going back to 1990 and illustrates the impact of missing out on just a few days of strong returns. The bars represent the hypothetical growth of

Exhibit 1. **US Market Intra-Year Gains and Declines vs. Calendar Year Returns, 1979–2017**

In US dollars. US Market is measured by the Russell 3000 Index. Largest Intra-Year Gain refers to the largest market increase from trough to peak during the year. Largest Intra-Year Decline refers to the largest market decrease from peak to trough during the year. Frank Russell Company is the source and owner of the trademarks, service marks, and copyrights related to the Russell Indexes.

$1,000 over the period and show what happened if you missed the best single day during the period and what happened if you missed a handful of the best single days. The data shows that being on the sidelines for only a few of the best single days in the market would have resulted in substantially lower returns than the total period had to offer.

Conclusion

While market volatility can be nerve-racking for investors, reacting emotionally and changing long-term investment strategies in response to short-term declines could prove more harmful than helpful. By adhering to a well-thought-out investment plan, ideally agreed upon in advance of periods of volatility, investors are better able to remain calm during periods of short-term uncertainty.

Exhibit 2. **Performance of the S&P 500 Index, 1990–2017**

In US dollars. For illustrative purposes. The missed best day(s) examples assume that the hypothetical portfolio fully divested its holdings at the end of the day before the missed best day(s), held cash for the missed best day(s), and reinvested the entire portfolio in the S&P 500 at the end of the missed best day(s). Annualized returns for the missed best day(s) were calculated by substituting actual returns for the missed best day(s) with zero. S&P data © 2018 S&P Dow Jones Indices LLC, a division of S&P Global. All rights reserved. One-Month US T- Bills is the IA SBBI US 30 Day TBill TR USD, provided by Ibbotson Associates via Morningstar Direct. Data is calculated off rounded daily index values.

TCI Investment Committee conducts on-going research and analysis that guides portfolio construction for TCI clients.
Sam Swift CFA, CFP®, AIF® is an Advisor in our Tucson office and Chief Investment Officer and Shareholder for TCI Wealth Advisors.

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TCI NEWS

A New Look for TCI

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BEFORE AFTER

TCI was founded 28 years ago on the fundamental principle of putting our clients' interests first through trusted, respectful, honest, and open communication. During that time, TCI has continued to grow, evolve, and innovate to better serve the needs of our clients. As a result, we now have several facets of our business which reach beyond traditional wealth management including the TCI Foundation, TCI Retirement Plans, Aspire by TCI, and Life Strategy by TCI.

While there are unique aspects within each of these businesses, they all remain deeply connected by TCI's enduring culture, philosophy, and steadfast commitment to serving our vision of empowering more purpose-filled lives. It is in that spirit that we are launching our new branding, further connecting all aspects of TCI under one consistent look and feel.

All this to say, we would like to take this opportunity to thank you once again for being the heart and soul of what makes TCI so special. We could not be more excited and honored to be on this journey toward financial clarity, prosperity, and overall well-being with each of you.